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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/590,677	10/24/2006	Ingo Uckelmann	3059A/106	2911
2101 7590 12/09/2010 Sunstein Kann Murphy & Timbers LLP 125 SUMMER STREET BOSTON, MA 02110-1618				
EXAMINER				
JENNISON, BRIAN W				
ART UNIT		PAPER NUMBER		
3742				
NOTIFICATION DATE		DELIVERY MODE		
12/09/2010		ELECTRONIC		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

PATENTS@SUNSTEINLAW.COM

### Office Action Summary

**Application No.**

10/590,677

**Applicant(s)**

UCKELMANN ET AL.

**Examiner**

BRIAN JENNISON

**Art Unit**

3742

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 27 September 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,2,4-12 and 14-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-12 and 14-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB-06)  
Paper No(s)/Mail Date 9/27/2010
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

**2. Claims 1-5 and 9-16 and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Lui et al (US 2002/0145213).**

Lui discloses regarding claims 1 and 18, a method of producing control data sets for the production of metallic and/or non-metallic products (see paragraph [0064]), by freeform sintering and/or freeform melting by means of a high-energy beam, in particular a laser beam or an electron beam (see paragraph [0087]), wherein a product is built up layer by layer out of a material to be added layer-wise by means of said beam guided by means of a control data set (see paragraph [0087]), wherein the method includes the steps of reading in a product target geometry data set which represents the target geometry of the product to be produced (see paragraph [0105]) and producing the control data set on the basis of the product target geometry data set, and the further steps of determining a compensation data set and/or a compensation function to compensate for manufacturing-related influences caused by sintering and/or melting, and combining the compensation data set with and/or applying the compensation function to the product target geometry data set to produce the control data set (see paragraph [0112] and Figure 6). Energy means is provided to sinter the powder at a

high temperature. (See Paragraph [0064]) Measurements are taken to decide on the location of deformations from the previous layer are occurring and corrections are made based on the next layer to be laid. (See Fig 6) Regarding claims 12-13 and 14; a device for producing control data sets for the production of metallic and/or non-metallic products, by freeform sintering and/or freeform melting by means of a high-energy beam, in particular a laser beam or an electron beam (see paragraph [0087]) wherein a product can be built up layer by layer out of a material which can be added layer-wise by means of said beam which can be guided by means of a control data set, wherein the device comprises: means for reading in a product target geometry data set which represents the target geometry of the product to be produced, and means for producing the control data set on the basis of the product target geometry data set, means for determining a compensation data set and/or a compensation function to compensate for manufacturing-related influences caused by sintering and/or melting, and means for combining the compensation data set with and/or applying the compensation function to the product target geometry data set to produce the control data set (see paragraph [0012] and Figure 6). Regarding claims 2-5 and 9-10; the size, shape and angle of inclination of the product are all included in the data set from the 3D data set of mathematical surfaces. Since the object is mapped in 3D higher degree polynomials will be used. (See Fig 6. and paragraph [0112]) Regarding claims 11; the 3D geometry of the product is included in the data set. Regarding claim 15, this claim is intended use and the device may easily be used to make a dental product. Regarding Claim 16, a laser may be used for sintering even though it is not used specifically for this

application. It is known in the art to use a laser as a high beam energy source for sintering. (See Paragraph [0008]) Regarding claim 17, the binder may be cured with an electron beam. (See Paragraph [0036])

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 6-8 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lui et al (US 2002/0145213) in view of Riley et al (US 2002/0107604) .

The teachings of Lui have been discussed above. Lui discloses a function used to compensate for the design but fails to disclose the compensation function containing a higher order polynomial for complex geometry regions. Riley discloses using a polynomial of degree N in a data set function for use with complex 3D geometry. (See Paragraph 0185) It would have been obvious to adapt Lui in view of Riley to provide a higher order polynomial because Riley discloses a polynomial of degree N for describing a complex function of data.

### ***Response to Arguments***

1. Applicant's arguments filed 9/27/2010 have been fully considered but they are not persuasive.
2. Applicant's argument, see pages 8-12, filed 9/27/2010, with respect to claims 1-14 have been fully considered and are persuasive. The 112 and 101 rejections of claims 1-14 have been withdrawn.

In response to applicant's argument on page 10 regarding claims 1-5 and 9-14, the compensation data is produced when measurements are taken after the first layer is

formed and before the formation of a second layer to determine where it should be placed. The dimensions of a physical part take part in the formation of data used to compensate for the new product. Since compensation data includes a geometry of the product to be produced, Lui does teach the compensation data.

### ***Conclusion***

3. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **BRIAN JENNISON** whose telephone number is (571)270-5930. The examiner can normally be reached on M-Th 9am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, TU HOANG can be reached on 571-272-4780. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/BRIAN JENNISON/  
Examiner, Art Unit 3742

12/2/2010

/Mark H Paschall/  
Primary Examiner, Art Unit 3742